



PTO/SB/21 (08-03)

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<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/712,761
	Filing Date	11/22/2003
	First Named Inventor	Kyo Inoue
	Art Unit	
	Examiner Name	
Total Number of Pages in This Submission	Attorney Docket Number	S02-133

ENCLOSURES (Check all that apply)		
<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Technology Center (TC)
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Tianhua Gu, Reg. No. 52,480
Signature	<i>Tianhua Gu</i>
Date	12/16/03

CERTIFICATE OF TRANSMISSION/MAILING		
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.		
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This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Attorney Docket No: S02-133

## In the United States Patent and Trademark Office

Application No.: 10/712,761  
Filed: 11/22/2003  
Title: Quantum Key Distribution System and Method Using Regulated Single-Photon Source  
Applicant(s): Kyo Inoue et al.  
Examiner: Not assigned  
Art Unit: Not assigned

Mailed 12/16/03  
Palo Alto, CA

### Information Disclosure Statement

Commissioner of Patents and Trademarks  
Washington, District of Columbia 20231

Dear Sir or Madam:

Attached is a completed Form PTO-1449 and copies of the pertinent parts of the references cited thereon.  
It is requested that the document(s) on the enclosed form be made of record.

#### Part I (Authority)

This statement is filed pursuant to:

( X ) 37 C.F.R. § 1.97(b).

This information disclosure statement is filed either (1) within three months of the filing date of the national applications; (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; or (3) before the mailing date of a first office action on the merits, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

( ) 37 C.F.R. § 1.97(c).

This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of either (1) a final action under 37 C.F.R. § 1.113 or (2) a notice of allowance under 37 C.F.R. § 1.311.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) (\$180), or a statement according to 37 C.F.R. § 1.97(e).

( ) 37 C.F.R. § 1.97(d).

This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c).

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) (\$180), and a statement according to 37 C.F.R. § 1.97(e).

#### Conditional Petition

It is respectfully requested that this information disclosure statement be considered, good cause being presented in Part III herein (certification). please treat this paper as the required petition.

If this statement crosses in the mail with an office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record.

To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

## Part II (Payment)

A check is enclosed as indicated:

- ☒ ( X ) No fee is due.
- ☐ ( ) The fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) is enclosed (\$180).
- ☐ ( ) The petition fee specified in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d) is enclosed (\$180).

## Part III (Statement)

Pursuant to 37 C.F.R. § 1.97(e), I certify:

- ☒ ( X ) No statement is necessary.
- ☐ ( )
  - (1) Each item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the statement.
  - ☐ ( ) The "communication from a foreign patent office" referred to in the certification is an International Search Report, possibly issued by the U.S. Patent and Trademark Office in its capacity as an International Search Authority or International Preliminary Examining Authority.
  - ☐ ( ) The "counterpart foreign application" referred to in the certification corresponds to an ancestor or descendent application of the application for which this information disclosure statement is filed.
- ☐ ( ) (2) No item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c), more than three months prior to the filing of the statement.

## Part IV (Additional Statement)

An additional statement regarding these items of information ☐ ( ) is, ☒ ( X ) is not, enclosed.

Copies of the cited art ☒ ( X ) are enclosed, ☐ ( ) are of record in parent application Serial No. \_\_\_\_\_ and will be provided if the Examiner deems it convenient.

Respectfully submitted,

Dated: 15 DEC 2003



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FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE										ATTY: DOCKET NO. S02-133/US		SERIAL NO. 10/712,761	
LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)										APPLICANT Kyo Inoue et al.			
										FILING DATE 11/22/2003		GROUP	
<b>U.S. PATENT DOCUMENTS</b>													
EXAMINER INITIAL		DOCUMENT NUMBER							DATE	NAME		RELEVANT INFORMATION	
	A	6	4	3	8	2	3	4	8/20/2002	Gisin et al.		380/256	
	B	5	5	1	5	4	3	8	5/7/1996	Bennett et al.		380/278	
	C	5	3	0	7	4	1	0	4/26/1994	Bennett		380/256	
	D												
	E												
	F												
	G												
	H												
<b>FOREIGN PATENT DOCUMENTS</b>													
		2- letter code	DOCUMENT NUMBER				DATE	COUNTRY			TRANSLATION		
											YES	NO	
	I												
	J												
<b>OTHER PRIOR ART</b> (Including Author, Title, Date, Pertinent Pages, Etc.)													
	K		Artur K. Ekert, "Quantum cryptography based on Bell's theorem," PHYSICAL REVIEW LETTERS, VOLUME 67, 5 AUGUST 1991, NUMBER 6.										
	L		Charles H. Bennett, "Quantum cryptography using any two nonorthogonal states," PHYSICAL REVIEW LETTERS, VOLUME 68, 25 MAY 1992, NUMBER 21.										
	M		Thomas Jennewein et al., "Quantum cryptography with entangled photons," VOLUME 84, NUMBER 20, PHYSICAL REVIEW LETTERS, 15 MAY 2000.										
	N		Z. Y. Ou et al., "Violation of Bell's inequality and classical probability in a two-photon correlation experiment," VOLUME 61, NUMBER 1, PHYSICAL REVIEW LETTERS, 4 JULY 1988.										
	O		Y. H. Shih et al., "New type of Einstein-Rosen-Bohm experiment using pairs of light quanta produced by optical parametric down conversion," VOLUME 61, NUMBER 26, PHYSICAL REVIEW LETTERS, 26 DECEMBER 1988.										
	P		Edo Waks et al., "Security of quantum key distribution with entangled photons against individual attacks," arXiv:quant-ph/0012078 v1, 16 DECEMBER 2000.										
	Q		Rosa Brouri et al., "Photon antibunching in the fluorescence of individual color centers in diamond," OPTICS LETTERS/VOL. 25, NO. 17/SEPTEMBER 1, 2000.										

	R	G. Bonfrate et al., "Asymmetric Mach-Zehnder germano-silicate channel waveguide interferometers for quantum cryptography systems," ELECTRONICS LETTERS, 21 JUNE 2001, VOL. 37, NO. 13
	S	Yasuyuki Inoue et al., "Elimination of polarization sensitivity I silica-based wavelength division multiplexer using a polyimide half waveplate," JOURNAL OF LIGHTWAVE TECHNOLOGY, VOL. 15, NO. 10, OCTOBER 1997.
	T	W. Tittel et al., "Quantum cryptography using entangled photons in energy-time Bell states," arXiv:quant-ph/9911109 v1, 25 NOVEMBER 1999.
	U	Nicolas Gisin et al., "Quantum cryptography," arXiv:quant-ph/0101098 v2, 18 SEPTEMBER 2001
	V	Charles H. Bennett et al., "Quantum cryptography without Bell's theorem," PHYSICAL REVIEW LETTERS, VOLUME 68, NUMBER 5, 3 FEBRUARY 1992.
EXAMINER		DATE CONSIDERED
<p>* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>		